



# 19<sup>th</sup> Annual Atmospheric Science Librarians International Conference

New Orleans, Louisiana, January 13-14, 2016

**“Earth System Science in Service to Society”**

**Wednesday, January 13, 2016**

*New Orleans Ernest N. Morial Convention Center*

*Room 340/341*

*ASLI Program & Dinner*

**8:00am On-site Registration**

**8:30am Welcome Address and Introductions**

Chris Sherratt, Chair, Atmospheric Science Librarians International (ASLI), MIT Libraries

**9:00am Keynote Presentation:**

**Resources to Help Scientists Communicate Climate Science**

Richard C. J. Somerville, Scripps Institution of Oceanography/University of California, San Diego

**Abstract:** Sound science can inform wise policy, and coping successfully with climate change is an urgent global challenge that requires scientific input. Today many scientists have opportunities to communicate what science has learned about climate and climate change. Yet being a scientific expert on these subjects does not necessarily mean having the skills to communicate effectively to a broad audience. A scientist giving a television interview, or writing an op-ed piece for a newspaper, or speaking to a group of local business leaders, or testifying before Congress, is engaged in an educational activity, but one which is very different from teaching graduate students. Like learning to ski or to drive a car skillfully, learning to communicate climate science well takes time and effort. Effective communication should always resemble a conversation rather than a monologue. A key to successful communication is clear and simple messages, repeated often, by a variety of trusted messengers. For many audiences, the most trusted messengers are those who understand and respect the worldview and cultural values of those with whom they are communicating. Knowledge, including knowledge about climate science, should never be communicated as a mere catalogue of facts. Science is an insightful process, a powerful tool for understanding the natural world, and a fascinating human activity. A great deal is already known about how to do a better job of science communication, but relatively few scientists have made good use of this knowledge. Many scientists are unaware of the resources available to help them do a better job at communicating climate science. In addition, a well-funded and effective professional disinformation campaign has been successful in sowing widespread confusion about climate change. As a result, many people mistakenly think climate change science is unreliable or is controversial within the expert community. Thus, one urgent task for climate scientists is to give the public useful guidelines for recognizing and rejecting junk science and disinformation. This talk will provide practical information and directions to valuable resources, starting with those available at <https://www.climatecommunication.org/>.

**10:00am Coffee Break** (Hall D, New Orleans Ernest N. Morial Convention Center)

**10:30am**      **Session 1: Outreach & Communication: Facilitating & Promoting Access to Resources, Collections, and Services**  
Moderator: Amy Butros, UC San Diego

**1.1: Communicating Science Across Organizations**

Jean Phillips and Margaret Mooney, University of Wisconsin, Madison, WI

**Abstract:** Organizations, large or small, can benefit from a strategic communications plan. That plan needs to be adept, current, and creative in its framework to effectively communicate the organization's purpose, accomplishments, and impact to stakeholders. Sharing those stories while adhering to a clearly defined message can take many forms, including: press releases, social media, internal and external newsletters, exhibit booths, special events, position statements, presentations, and websites. This talk will share best practices and lessons learned through implementation of a strategic communications plan at the Space Science and Engineering Center and Cooperative Institute for Meteorological Satellite Studies at the University of Wisconsin-Madison.

**10:45am**      **1.2: An Embedded Librarian Working in the Bureau of Ocean Energy Management**

Stephen Pomes, U.S. Dept. of the Interior, Bureau of Ocean Energy Management, New Orleans, LA

**Abstract:** The presentation will briefly discuss the mission of the federal government agency, the Bureau of Ocean Energy Management, which "promotes energy independence, environmental protection and economic development through responsible, science-based management of offshore conventional and renewable energy resources." In addition, there will be a discussion of methods (e.g., OCLC interlibrary loans, EDMS) that an embedded librarian uses to obtain and manage information used to support this mission.

**11:00am**      **1.3: Public Access to Scientific Research at Los Alamos National Laboratory Research Library**

Michelle A. Mittrach, Los Alamos National Laboratory, Los Alamos, NM

**Abstract:** This session will highlight recent public access initiatives undertaken at the Los Alamos National Laboratory Research Library, specifically development of online tools, Electronic Public Reading Room (EPRR) and Los Alamos Research Online, in efforts to provide access to and discoverability of the scientific and technical research conducted at the Laboratory.

**11:15am**      **1.4: Public Access to Federally Funded Scientific Research: Building Communities of Collaboration**

Janice Young, U.S. Department of Energy, Oak Ridge, TN

**Abstract:** In an era of tightened fiscal belts and mandatory budget cuts, when libraries are asked to work smarter and do more and greater, "How can I as a librarian help students' access quality, authoritative, peer-reviewed, evidence-based, robust, and sustainable scientific data in a cost-effective manner?" Several federal agencies have released their Public Access Plans as a result of the February 22, 2013, White House Office of Science and Technology Policy (OSTP) memorandum titled "Increasing Access to the Results of Federally Funded Scientific Research." Among the many public access returns on federal research and development expenditures, one is the more accessible knowledge resources to prepare the next generation of chemists, engineers, mathematicians, biologists, and

physicists. Public access to the scholarship of STEM scientists and researchers is a valuable resource, with downstream benefits for students.

**11:30am      1.5: As Clear as Mud: Librarian as Facilitator during a Sedimentology Outreach Event for Young Girls**

Raquel Horlick, Tulane University, New Orleans, LA

**Abstract:** In this presentation, I will share my experiences volunteering in a Sediment Dynamics Lab during a Girls in STEM outreach event. Girls in STEM (<http://tulane.edu/sse/outreach/gist/>) is a Tulane University program designed to encourage and empower young girls to pursue careers in the sciences by matching them with female role models in science, engineering, and technology. During our workshop, girls aged 10-13 years old were invited to learn all about deltas (specifically the Mississippi River Delta) and how climate change affects our habitat (i.e., New Orleans). This was done via hands-on learning where girls were able to build and manipulate a delta in the lab. I will explain how the collaboration was formed, role played, lessons learned, and the benefits for librarians to participate in these types of STEM outreach opportunities.

**11:45am      Questions & Discussion**

**12:00pm      Lunch**

**1:30pm      Session 2: New Roles for Researchers and Librarians: Scholarly Profiles, Cited References, and Bibliometrics**

Moderator: Gloria Aversano, NOAA Miami Regional Library

**2.1: Evolving Services for Scholars**

Linda Musser, Pennsylvania State University, University Park, PA

**Abstract:** Increasingly, scholars have new options for managing their research profile. Baseline lists of citation counts to published works have been supplemented by new metrics and services such as the h-index, SciVal, Altmetrics and Google Scholar profile. Given this proliferation, scholars are turning to librarians to help navigate these uncharted waters. Services that librarians are providing to help users develop their scholarly profiles will be described.

**1:45pm      2.2: Measuring Impact at NCAR: Bibliometrics and Beyond**

Matthew S. Mayernik, NCAR, Boulder, CO; and M. Ramey and K. Maull

**Abstract:** For many researchers and institutions looking to show their scholarly impact to traditional audiences such as administrators or funding agencies, bibliometrics are an inevitable part of the conversation. The library community is well acquainted with bibliometrics, but in today's new and evolving libraries, bibliometrics are seen as only part of a broader landscape of metrics, especially as the social context for scholarly research increases in importance. This panel will seek to examine how bibliometric analysis and assessment are being used at the National Center for Atmospheric Research (NCAR). Taking a brief look at the history of bibliometrics, and discussing their use in "individual author" metrics at NCAR, the panel will then seek to broaden the discussion to new approaches being offered at the NCAR Library. New methods of data aggregation have offered the opportunity to gather bibliometrics on groups, facilities, models and more. This panel will discuss (1) our work producing bibliometric data and analysis, with groups such as the NCAR scientific computing division as part of an NSF funded EAGER Grant, (2) our work with a group building and maintaining the widely used WRF atmospheric model, and (3) the development of new software solutions the NCAR Library is building to process and share the data so that it is open and accessible to the NCAR community. We

hope to share the lessons we have learned and stimulate a discussion of the place of libraries in the production, analysis, and dissemination of bibliometric data.

**2:15pm      2.3: Understanding the Needs of the Modern Research Scientist**  
Courtney Kearney, Louisiana State University, Baton Rouge, LA

**Abstract:** Traditionally, the role of a research scientist was strictly to design and complete experiments in order to expand the understanding of a natural phenomenon. Like many fields, this role is ever changing and expanding. The modern day research scientist is now expected to additionally have skills in marketing, grant writing, teaching, educational outreach and data management, often with little to no professional development in these facets. With the expansion of the research scientist role, researchers are now encouraged to seek support to fulfill these obligations from funding bodies and their institutions; however, they are unaware of the resources available to them. As an Oceanography Research Scientist transitioning to Library Science, I aim to provide insight into the changes occurring for researchers and how librarians can be a better part of this progression.

**2:30pm      Coffee Break and Formal Poster Viewing (Hall D/E)**

**3:30pm      Session 3: ASLI Choice Book Awards (Room 340/341)**

**4:15pm      Session 4: Historical Data Rescue**  
Moderator: Linda Musser, Pennsylvania State University

**4.1: ACRE and Data Rescue: Bringing Yesterday's Climatic Data into the Present and Future (Invited Presentation)**

Gilbert P. Compo, Univ. of Colorado/NOAA/Earth System Research Laboratory/Physical Sciences Division, Boulder, CO

**Abstract:** ACRE, the Atmospheric Circulation Reconstructions over the Earth, is an international, multi-partner initiative that collects and digitizes terrestrial and marine weather observations to create data products used worldwide, often in reconstructions (reanalyses). This presentation will provide an overview of the data rescue efforts now underway, "data sparse" regions of the world and how libraries might support the rescue of this historical data.

**4:45pm      Session 5: Tech Tips and Tools: An ASLI favorite!**  
Moderator: Brian Voss, NOAA Seattle Regional Library

**5.1: NTRL, the National Technical Reports Library**  
Linda Musser, Pennsylvania State University, University Park, PA

**Abstract:** NTRL is the latest offering by the National Technical Information Service. NTRL builds upon the NTIS bibliographic database by offering full text of many of the documents indexed in NTIS. The database capabilities will be described as well as access options. (Yes, there is some free access!)

**5:00pm**      **5.2: 3D Scanning – the Next Horizon for Libraries?**  
Linda Musser, Pennsylvania State University, University Park, PA

**Abstract:** 3D printing has become very popular and many libraries have invested in the technology. Less attention has been given to the need for 3D scanning capabilities. This tech tidbit will briefly outline the challenges and options for those interested in providing 3D scanning capability.

**5:15pm**      **5.3: Browsing Journals on the Go: BrowZine**  
Gene Major, Program Manager, Library Associates, NASA/GSFC Library, Greenbelt, MD

**Abstract:** The NASA Goddard Library explored new technologies to provide mobile access to the Library's electronic journal subscriptions. After a 3-month trial by Library staff and a 4-month Goddard-wide trial, a recommendation was made to purchase BrowZine, a mobile content delivery app. The app was designed specifically for mobile phones and tablets for users to easily browse and read scholarly content. The talk will describe the Goddard trials, issues uncovered, and potential usefulness of the product.

**5:30pm**      **5.4: Searching & Using Collections in HathiTrust**  
Amy Butros, UC San Diego, La Jolla, CA

**Abstract:** HathiTrust is a partnership of over 100 academic and research institutions offering a collection of millions of titles digitized from libraries around the world, with over 35% of the collection in public domain. The former Scripps Institution of Oceanography Library's collection is currently the largest collection in HathiTrust. Tips for searching and creating collections in HathiTrust will be covered.

**7:00pm**      **Annual ASLI Dinner**

**Thursday, January 14, 2016**  
*New Orleans Ernest N. Morial Convention Center*  
*Room 340/341*  
**ASLI Program & Business Meeting**

**8:00am**      **One day on-site Registration**

**8:30am**      **Session 6: Vendor Updates – Part 1**

Moderator: Christine Sherratt, MIT Libraries, Massachusetts Institute of Technology

**6.1: AMS Publications: Year in Review and 2016 Update**

Kenneth F. Heideman, AMS, Director of Publications, Boston, MA; and S. J. Shangraw

**9:00am**      **6.2: Springer Publications News**

Robert Doe, Springer, Department of Earth Science and Geography, Dordrecht, Netherlands

**9:15am**      **Session 7: Historical Glimpses and Perspectives – Part 1**

Moderator: Amy Butros, UC San Diego

**7.1: Online at Last! A Description of the BAMS Legacy Scanning Project**

Jinny Nathans, American Meteorological Society, Boston, MA

**Abstract:** One of the centerpieces of the upcoming centennial celebration of AMS's first hundred years (in 2020) is the initiation of a project which will make the Bulletin of the American Meteorological Society (BAMS) available and searchable online from cover to cover. The new scans will be seamlessly integrated with the AMS journal articles website and in addition to going back to volume 1, number one from 1920, will include all previously omitted material from the online articles currently only available back to 1970. Thus conference accounts, announcements, awards presentations, obituaries, etc. will all be searchable--both indexed and full-text--and accessible free of charge. This talk will describe the beginning of this project and the issues encountered in setting up metadata rules, physically scanning material in different physical sizes and the decisions that had to be made when putting online material which was produced not only over the span of the life and growth of the AMS, but also over the span of the 20th century.

**9:30am**      **7.2: Access to Legacy Information from the Meteorological and Geoastrophysical Abstracts (MGA)**

Rich Hummel, Sr. Project Manager, SciTech, Ann Arbor, MI

**Abstract:** A description of the project to add older years of MGA into the database, and make them available for search and discovery.

**9:45am**      **Session 8: Vendor Updates – Part 2**

Moderator: Amy Butros, UC San Diego

## **8.1: ProQuest Atmospheric Science Collection & the Meteorological and Geostrophysical Abstracts Database**

Rich Hummel, Sr. Project Manager, SciTech, Ann Arbor, MI

**10:00am**      **Coffee Break with Formal Poster Viewing (Hall D/E)**

**11:00am**      **Session 9: The National Centers for Environmental Information Climate Portal**

Moderator: Christine Sherratt, MIT Libraries, Massachusetts Institute of Technology

Invited Presentation: **Finding Climate Data Fast: Navigating the National Centers for Environmental Information Climate Portal**

Michael J. Brewer, NOAA/NESDIS/NCEI, Asheville, NC

**Abstract**: Librarians, researchers and the public often turn to the National Climatic Data Center (NCDC) for climatic information. Recently NOAA consolidated NCDC with the National Geophysical Data Center and the National Oceanographic Data Center to form the National Centers for Environmental Information. This presentation will explore how to use the NCEI portal with its Search, Mapping and Data Tools to find commonly sought datasets.

**11:30am**      **Session 10: Librarians and Research Data Curation & Management Programs and Initiatives**

Moderator: Gene Major, Library Associates, NASA/GSFC Library

**10.1: Communities, Collaboration, and Conversation: Building Blocks for Data Curation**

Elizabeth Fish, University of Miami, Miami, FL; and T. Norris

**Abstract**: Over the previous decade research intensive institutions have recognized the need to provide data management services to their research communities. The services are targeted first at the data sharing and management requirements mandated by federal funding agencies, and second to broader and more hopeful ideologies of sharing in the research environment. At the University of Miami a data curation initiative was begun in 2009 and formalized in 2015 to develop strategic thinking on how to meet these service goals. Thus far the initiative has focused on needs assessment and community building around data curation. This research process has produced some valuable administrative data and has also served as a community building effort. Incentivizing good data curation and best practices promotes cultural change in the research community. Talking to researchers that seek data curation assistance contributes to this culture change. We present preliminary reflections from this process which also includes curriculum development for early career researchers, a critical component of community building around data curation

**11:45am      10.2: The Library Research Data Curation Program – Building Buzz at UC San Diego**

Reid Otsuji, University of California, San Diego, La Jolla, CA

**Abstract:** Information professionals working in innovative Research Data Services programs are currently developing programs and protocols focused on the core data needs of the researcher. A successful data curation program teaches researchers how to plan, collect, manage and organize the data they collect, and establishes a collaborative workflow between researchers, information professionals, and IT departments. In recognition of the changing research data environment, the University of California has dedicated both financial and personnel resources to meet the challenges that this changing environment presents. The Library Research Data Curation Program (RDCP) at UC San Diego was developed to support the work of campus researchers throughout the data life cycle from data management planning, accessibility to data through sharing and discovery, to long-term preservation strategies. This presentation highlights the exciting two year developments of the UC San Diego Library Research Data Curation Program. The presenter will discuss the UC San Diego Library's Research Data Curation Program services and tools currently available to support the core data needs of our campus research community. The presentation will describe: • Planning, development and implementation of Research Data Curation services including the program's current focus on outreach and training. • Brief overview of featured research data collections currently available in the Library Digital Collections discovery tool.

**12:00pm      Lunch**

**1:30pm      Joint Session 7: Data Stewardship**

Hosts: (Joint between the 19th Conference of Atmospheric Science Librarians International; and the 32nd Conference on Environmental Information Processing Technologies)

Co-Chair: Matthew S. Mayernik, NCAR

**J7.1: Repository Cross-Linking for Open Archiving and Sharing of Scientific Data and Articles**

Matthew S. Mayernik, NCAR, Boulder, CO; and J. Phillips, D. Middleton, and E. Nienhouse

**Abstract:** This presentation will outline a model for how multiple repositories of diverse resources can exchange and connect related information via complementary workflows and metadata sharing. This project is producing a pilot implementation of repository cross-linking, using two repositories provided and managed by the National Center for Atmospheric Research (NCAR) as the development bed: 1) the OpenSky repository, managed by the NCAR Library, which hosts and provides access to the record of scholarship produced by UCAR and NCAR staff, and 2) is the Earth System Grid (ESG), managed by the NCAR Computational & Information Systems Lab, which provides infrastructure for the distribution and access of climate models, data, and software. Building connections between these repositories will increase public access to geoscience information and data by increasing the visibility of data and information across previously unconnected systems. The goals of this project are to increase discoverability and utility of data through explicitly linking data to important documentation.

1:45pm

**J7.2: Parameterisation of Flows and Pollutant Transport over Idealised Urban Roughness**

Chun-Ho Liu, University of Hong Kong, Pokfulam, Hong Kong; and Y. K. Ho and C. T. Ng

**Abstract:** Atmospheric flow over urban areas basically is a type of turbulent flow over roughness. The flows and pollutant transport process, especially at the lower part of the boundary layer (BL), is strongly modified due to the presence of building geometry. The aerodynamic resistance exerted by the surface roughness reduces the mean velocity in the lower BL but enhances the turbulence intensity. Moreover, the near-wall impingement structures over rough surfaces are attributed to the flow dynamics aloft, leading to increasing aerodynamic resistance and BL depth. However, the dependence on surface morphology and BL depth is not yet well understood. There is apparently a lack of systematic studies on how the building roughness affects street-level ventilation and pollutant transport. In the practical perspective, there is a need for formulating a simple and reliable ventilation and pollutant dispersion estimate for rectifying the elevated pollutant concentrations in urban areas....In the preliminary analysis, we utilise  $f$ , ACH and  $\sigma_z$  to quantify the aerodynamic resistance, street-level ventilation and pollutant plume dispersion for idealised 2D rough surfaces and attempt to determine their correlation as well. Both CFD and experimental results show that the ventilation and dispersion coefficient are mainly governed by turbulent transport (over 60%). Moreover, the results demonstrate that the turbulent components of ACH and  $\sigma_z$  are linear functions of the square root of ( $ACH'' \propto f^{1/2}$ ) and forth root ( $\sigma_z \propto f^{1/4}$ ) of friction factor, respectively, regardless of the surface geometry and the BL depth aloft. In view of the dominated turbulent transport, it is proposed that  $f$  could serve as an estimate to predict the minimum ventilation rate and pollutant dispersion of urban roughness. Although the configurations for both CFD and experimental simulations are simplified that might not fully represent the real situations, the results obtained facilitate the development of parameterisation which could be extended to realistic configuration. Additional experimental and modelling works are undertaken to enrich our understanding of the transport processes over urban roughness and further examine our hypothesis as well.

2:00pm

**J7.3: Transforming NOAA's Data Stewardship: Formation of the National Centers for Environmental Information (NCEI)**

Scott A. Hausman, NOAA/NESDIS, Asheville, NC

**Abstract:** NOAA recently reorganized the National Climatic Data Center, National Geophysical Data Center and National Oceanographic Data Center to form the National Centers for Environmental Information (NCEI). A major objective of this reorganization has been the consolidation of disparate practices to establish a more cohesive approach to data stewardship. This presentation will detail how NCEI has engaged in an effort to define tiers of data stewardship and related services, consolidate data management planning systems, streamline and accelerate the accession of data into the digital archive, and build portal and other access technologies all to improve the discovery and usability of NOAA's billion dollar investment in environmental data and information.

2:15pm

**J7.4: New Information Systems for Data Stewardship at NCEI**

Nancy A. Ritchey, National Centers for Environmental Information (NOAA/NESDIS/NCEI), Asheville, NC; and P. Jones and K. S. Casey

**Abstract:** Data archiving is a key part of the data management lifecycle. Traditional data management requires continued coordination and resources for adequate stewardship between the producer, long-term archive and its users. When faced with data archiving, producers usually have many questions: Who do I contact? What documentation and

metadata so I need to provide with my data? How do I send the data? How long will it take to archive my data? Etc. Answers to these and other questions are necessary for proceeding with data management planning and sometimes for the development of the data itself. The NOAA National Centers for Environmental Information (NCEI) has assisted data producers in managing and archiving their data by providing discovery, access and other services to support scientific data archival. NCEI has created guidelines, templates and tools for data producer to comply with standard data formats and metadata conventions, which are necessary for increasing data usability and preserving information content. NCEI is also streamlining its archive interfaces. A new API in development will allow data producers to submit data and actively manage their data after it's been archived at NCEI. For process improvement, NCEI is using the NASA Earth Science Data Preservation Content Specification approved/endorsed by the Federation of Earth Science Information Partners (ESIP Federation) as a guide for deciding on the contents to be archived. These resources communicate NCEI's expectations to data producers in advance regarding what should be provided and how it should be formatted for a long-term, useful data archive. The common, distributed approach to the data management lifecycle increases efficiency, scale, and quality of the data preserved for future users.

**2:30pm**

**J7.5: Publishers' Policies for Data Citation: Do they Ease Data Discovery and Use?**

Christine Sherratt, MIT Libraries, Massachusetts Institute of Technology, Cambridge, MA; and C. Malinowski

**Abstract:** For decades, publisher policies have guided scientists on how to cite publications they use in their work. Now, with increased attention to the importance of data they use and create, many publishers have adopted policies for data citation. The intent is that data citation will credit those who create data, and better enable data discovery and use. In this paper we explore data citation practices of MIT authors in atmospheric sciences. Through interviews with research groups and a study of data citation in their publications, we seek to understand the types of data used and how these researchers discover, cite and store data they use and/or create.

**2:45pm**

**J7.6: But I Don't Have Access to Your Server, and My Grad Student Left Last Month: Meeting the Challenges of Data Transfer and Metadata Gathering**

Juliane Schneider, University of California, San Diego, La Jolla, CA

**Abstract:** As sharing and preserving data become necessary for funding, and researchers become more familiar with the benefits of data sharing, there is less resistance to giving their data to a repository. The challenge now becomes how to get it there safely with the minimally required amount of description needed for adequate discovery, retrieval and usage. At UCSD, we have developed a number of web forms, tools, processes and strategies for transferring the data to a space shared by the data provider and the research data curation department, for understanding the structure of the data given to us, and collecting not only metadata on the item level, but collection level metadata and granular metadata about scripts and software used in analysis. We also collect information about copyright, licenses and potential access level restrictions. I will present our step by step process of acquiring data and metadata, and explain the points in the process where we use our tools and forms to facilitate communication between data provider and curator for a streamlined, mutually beneficial experience.

**3:00pm**

**Coffee Break**

**3:30pm**      **Session 11: Historical Glimpses and Perspectives Part 2**  
Moderator: Amy Butros, UC San Diego

**11.1: The Early History of Space Weather: Observations that  
Connected Solar Activity and its Influence on the Earth**  
Gene Major, NASA/GSFC Library, Greenbelt, MD

**Abstract:** Storms on Earth, such as hurricanes, can have devastating consequences for our planet's inhabitants. But a potentially more catastrophic "storm" can come from our own Sun. As early as 1722 compass maker George Graham realized mysterious movement he saw in his compass needles correlated to the appearance of aurora, suggesting the phenomena were related. In 1859, the largest solar flare (the Carrington event) preceded intense auroral activity worldwide for many days and caused disturbances in the nascent telegraphic industry. And in the late 1870s William Ellis offered the first known forecast of severe electrical currents on Earth due to solar activity in 1879, when he warned that sensitive telegraphic equipment might react to an upcoming increase in solar activity. This talk will focus on these early observers and how their discoveries led to the "space weather" that can influence the performance of space-borne and ground-based technological systems and endanger human life or health.

**4:00pm**      **Session 12: ASLI Business Meeting**

**5:00pm**      **96th AMS Annual Meeting adjourns**

**Friday, January 15, 2016**

**ASLI Field Trip**

Coordinator: Judie Triplehorn

